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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/104,788	06/25/1998	JOHN ADAMS MEYERS	97-ST37	4685

10395            7590            07/15/2002  
SMITH INTERNATIONAL INC.  
16740 HARDY  
HOUSTON, TX 77032

EXAMINER
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DANG, HOANG C

ART UNIT	PAPER NUMBER
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3672  
DATE MAILED: 07/15/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/104,788	Applicant(s) MEYERS ET AL.
	Examiner Hoang Dang	Art Unit 3672
	<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>	
<b>Period for Reply</b>		
<b>A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.</b>		
<ul style="list-style-type: none"> <li>- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.</li> <li>- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.</li> <li>- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.</li> <li>- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).</li> <li>- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).</li> </ul>		
<b>Status</b>		
1) <input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>02 May 2002</u> .		
2a) <input checked="" type="checkbox"/> This action is FINAL.                    2b) <input type="checkbox"/> This action is non-final.		
3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.		
<b>Disposition of Claims</b>		
4) <input checked="" type="checkbox"/> Claim(s) <u>1-69 and 71</u> is/are pending in the application.		
4a) Of the above claim(s) _____ is/are withdrawn from consideration.		
5) <input type="checkbox"/> Claim(s) _____ is/are allowed.		
6) <input checked="" type="checkbox"/> Claim(s) <u>1-69 and 71</u> is/are rejected.		
7) <input type="checkbox"/> Claim(s) _____ is/are objected to.		
8) <input type="checkbox"/> Claim(s) _____ are subject to restriction and/or election requirement.		
<b>Application Papers</b>		
9) <input type="checkbox"/> The specification is objected to by the Examiner.		
10) <input type="checkbox"/> The drawing(s) filed on _____ is/are: a) <input type="checkbox"/> accepted or b) <input type="checkbox"/> objected to by the Examiner.		
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).		
11) <input type="checkbox"/> The proposed drawing correction filed on _____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner.		
If approved, corrected drawings are required in reply to this Office action.		
12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.		
<b>Priority under 35 U.S.C. §§ 119 and 120</b>		
13) <input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).		
a) <input type="checkbox"/> All b) <input type="checkbox"/> Some * c) <input type="checkbox"/> None of:		
1. <input type="checkbox"/> Certified copies of the priority documents have been received.		
2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____.		
3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).		
* See the attached detailed Office action for a list of the certified copies not received.		
14) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).		
a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.		
15) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.		
<b>Attachment(s)</b>		
1) <input type="checkbox"/> Notice of References Cited (PTO-892)		
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)		
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.		
4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____.		
5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)		
6) <input type="checkbox"/> Other: _____.		

**DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

2. Claims 1-18, 20, 22-42, 44, 46-63, 64, 66, 68, 69 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmberg (US 5,794,728) in view of Keshavan et al (US 5,370,195) or Hedlund (US 5,575,342).

Palmberg discloses the invention as claimed except that the exposed portions of the inserts are not enhanced with a superhard material. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the exposed portions of the inserts of Palmberg's with a layer of superhard material as claimed because it is well known in the well drilling art to provide inserts of a percussion drill bit with a layer of polycrystalline diamond to their wear resistance as evidenced by either Keshavan et al (see column 2, lines 35-49 and column 3, lines 3-7) or Hedlund et al (see column 2, lines 58-64 and column 3, lines 28-39).

As for claims 7-11, 51-53 and 54-58, it would have been obvious to use the dimension or value within the claimed ranges since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As for claims 69 and 71, since the diameter of the second exposed portions of the "second insert" 21 of Palmberg is larger than the diameter of the first exposed portions of the "first

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insert" 23 of Palmberg, the "ratio of the thickness to the radius of curvature of the second exposed portions is less than the ratio of the thickness to the radius of curvature of the first exposed portions" as recited.

3. Claims 1-18, 20-42, 44-64 and 66-69 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skidmore (US 3,955,635) in view of Keshavan et al (US 5,370,195) or Hedlund (US 5,575,342).

Skidmore discloses the invention as claimed except that the exposed portions of the inserts are not enhanced with a superhard material. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the exposed portions of the inserts of Skidmore=s with a layer of superhard material as claimed because it is well known in the well drilling art to provide inserts of a percussion drill bit with a layer of polycrystalline diamond to their wear resistance as evidenced by either Keshavan et al (see column 2, lines 35-49 and column 3, lines 3-7) or Hedlund et al (see column 2, lines 58-64 and column 3, lines 28-39).

As for claims 7-11, 51-35 and 54-58, it would have been obvious to use the dimension or value within the claimed ranges since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As for claims 69 and 71, since the diameter of the second exposed portions of the "second insert" (outer ones) of Skidmore is larger than the diameter of the first exposed portions of the "first insert" (inner ones) of Skidmore, the "ratio of the thickness to the radius of curvature of the

second exposed portions is less than the ratio of the thickness to the radius of curvature of the first exposed portions" as recited.

4. Claims 1-19, 21, 23-43, 45, 47-49, 50-65, 67, 69 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isakov (US 4,716,976) in view of Keshavan et al (US 5,370,195) or Hedlund (US 5,575,342).

Isakov discloses the invention as claimed (see figures 1-14; column 4, line 37 through column 5, line 24) except that the exposed portions of the inserts are not enhanced with a superhard material. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the exposed portions of the inserts of Isakov's with a layer of superhard material as claimed because it is well known in the well drilling art to provide inserts of a percussion drill bit with a layer of polycrystalline diamond to their wear resistance as evidenced by either Keshavan et al (see column 2, lines 35-49 and column 3, lines 3-7) or Hedlund et al (see column 2, lines 58-64 and column 3, lines 28-39).

As for claims 7-11, 51-55 and 54-58, it would have been obvious to use the dimension or value within the claimed ranges since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As for claims 69 and 71, since the diameter of the second exposed portions of the "second insert" (outer ones) of Isakov is larger than the diameter of the first exposed portions of the "first insert" (inner ones) of Isakov, the "ratio of the thickness to the radius of curvature of the second exposed portions is less than the ratio of the thickness to the radius of curvature of the first exposed portions" as recited.

*Response to Arguments*

5. Applicant's arguments filed May 2, 2002 have been fully considered but they are not persuasive.

Contrary to applicant's argument, as shown in the drawings of all of the three primary references (Palmberg, Skidmore and Isakov), the contact areas of the second inserts in all of the primary references are larger than the contact areas of the first inserts because of their larger radius of curvature. It is agreed that a small diameter insert's contact area is not necessarily less than a larger diameter insert's contact area such as an insert with a small diameter and relatively flat profile can have a contact area larger than a larger diameter insert having a more hemispherical profile as pointed out by applicant. However, it is abundantly clear from figure 2 of Palmberg, figures 1 and 5 of Skidmore and figure 7 of Isakov that that is not the case here. As shown in sectional views of these figures, it is not seen how the contact area of "second inserts" can be smaller or equal to the contact area of "first insert".

*Conclusion*

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

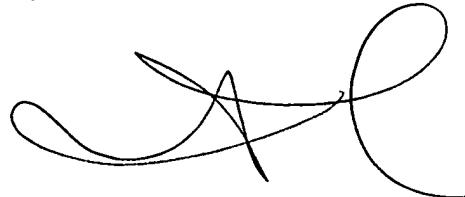
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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang Dang whose telephone number is 703-308-2149. The examiner can normally be reached on 9:15-5:45 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Bagnell can be reached on 703-308-2151. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3597 for regular communications and 703-305-3597 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2168.



**Hoang Dang  
Primary Examiner  
Art Unit 3672**

94104788.fin  
July 12, 2002